Multichannel

Pipette, Electronic

ThumbWheel

BioHazard
Filter Pkg

Drummond Pipete-Aid

Pipetting

Pipette Instruments

Pipette Calibration and Tracking System

(Detect on the Pictures to Jump to that location in the SOP)

Pipette tester

Drummond Hood-Mate
Pipete-Aid

Finnpipette,
Single channel

Prepared by: Bob Morrison
Instrumentation Specialist
Jan 08, Latest Revision Aug 2012

Artel Pipette Calibration
System

Pipetting: Pippette Tester, Brinkman, @FV

Brinkmann® Universal Pipette Tester, gifted from Millipore 3/2010

The Brinkmann Universal Pipette Tester (UPT) is a hand operated pump system that easily tests any manufac-turer's piston-operated pipettes for air leaks, proper tip fit, and pipette function. A slight vacuum is introduced into the pipette and a high resolution gauge measures any pressure changes caused by leaking. Prior to standard gravimetric performance tests and calibration, a quick test can be done to see if any wearing parts, such as pistons, seals, or O-rings, need to be replaced. Once worn parts are replaced, proper pipette function may be restored without modifying the factory calibration.

Pipetting: Finnpipette, Maintenance

Plunger (up/down) and Volume setting (twist motion)

Tip release plunger

Handle/Grip/ and Piston chamber (inside)

Volume setting dials (cam)

Tip tube with internal tube housing internal piston and O-ring in some models. See Maint note below.

Standard Maint kit. O-ring, lubricant

Maintenance Note: In general, two problems tend to surface most often: 1) jamming of the dial settings or 2) sluggish or stuck plunger operations.

1) Use the tool to remove the lower outer tip tube and the sliding trapezoid-shaped tip release at the grip. This should expose the digit cam mechanism where a small screwdriver or other tool can be used to loosen the cams or realign them.

2) Remove the lower outer tip tube, then use the tool to unscrew the inner tube from the grip handle. This will expose an inner plunger with a piston that moves inside the shaft of the grip handle. Remove any debris in the tubes, then lubricate the piston cylinder area with light grease (comes with device) or WD40. O-rings can also be replaced in some models.

Link to Finnpipette User Manual, info on Calibration……pdf

Pipette: Manual, Eppendorf, Research Series

Features:
Two-button operation
Autoclavable lower part
TÜV award: ergonomic, user-friendly and user-tested
Viable calibration seal indicates factory calibration has not been changed
Chemically resistant
Reduced operating forces
Single-handed operation
4-digit display
Maintenance-free nose cones
Three-year warranty

Link to Eppendorf .com

Link to Eppendorf Manual .. pdf

Link to Eppendorf Pipette SOP.. pdf

Link to Basic Training in Micropipetting

Pipettes: Wards, Student Workshop, BRDG, 2011

15 V 1730 WARD'S Micropipette, 0.5–10 µL $140.00

15 V 1732 WARD'S Micropipette, 10–100 µL $140.00

15 V 1734 WARD'S Micropipette, 100–1,000 µL $140.00

Pipette: Electronic, Thermo Scientific, Matrix, Impact2

Features:

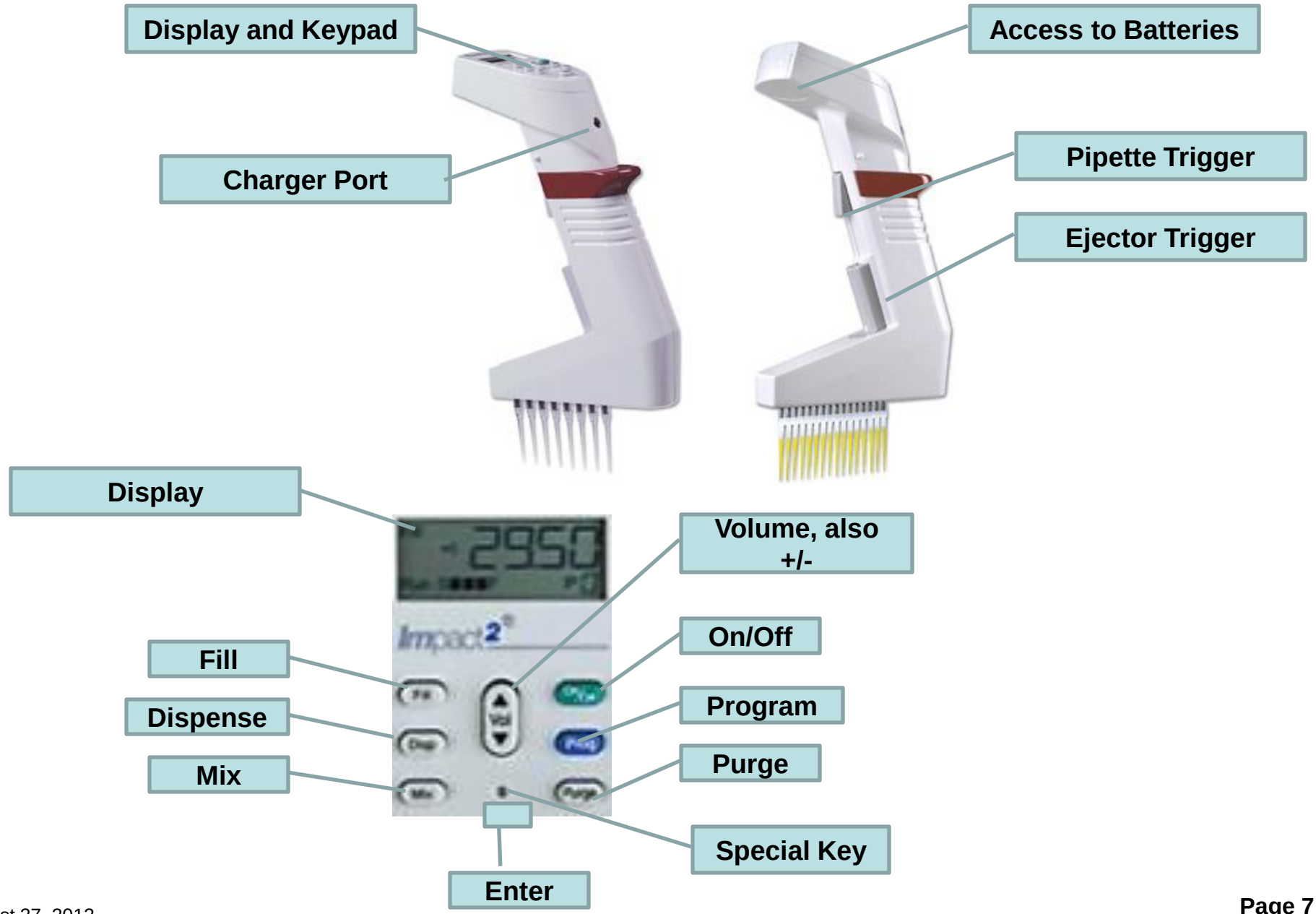
• Lightweight, ergonomic design increases comfort and reduced risk of repetitive stress injuries (RSI)
• Trigger-based operation and tip ejection eliminates use of thumb; reduces strain when ejecting tips
• Step-based programming makes it logical, intuitive and easy to create programs. Enables the pipette to perform all the tasks you might do with a manual pipette—only faster and with less effort—as well as functions such as serial dilutions across a microplate
• On-board memory saves six programs (up to 40 steps each) allowing you to spend more time pipetting and less time programming
• Large volume capacity of 1250 µl per tip allows you to fill an entire microplate with up to 100 µl per well from a single aspiration
• Advanced battery technology allows days of work between charges, no memory effect
• Stepper motor technology and error correction software ensure accurate and precise pipetting, even when performing incremental dispensing or when operating at top or bottom of a pipette's volume range
• Pipette can be used while plugged in resulting in no downtime during recharging

Link to Thermo Scientific Matrix Website

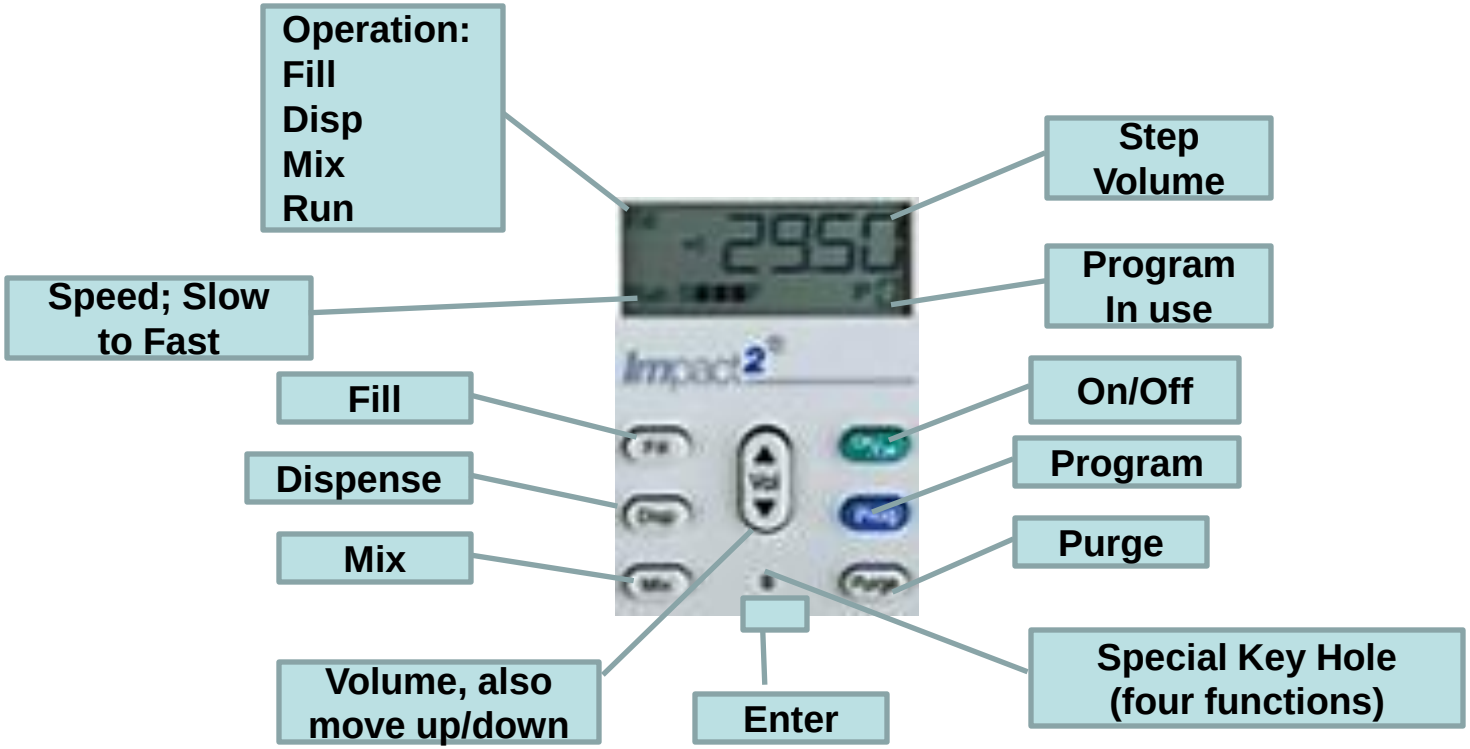
Link to Thermo Scientific Matrix Specifications/Options pdf

Link to Basic Training in Micropipetting

Pipette: Electronic, ThermoSci-Matrix, Controls



Pipetteing; Electronic, ThermoSci-Matrix, Keys



On/Off ; Flashes ZERO then moves to first step of any previously selected Program
Prog; enables storage of up to five programs in locations1-5 plus “scratch pad” open program #0
Purge; enters and purge prompt to abort the program, dispenses any remaining liquid after trigger
Run; performs the operation displayed when you activate it using the trigger, 3 beeps at end of a program
Special Key; (use pipette tip to activate) four functions; beep tone, pace of repeat operations, calibration, and
SPd ;for adjusting the speed by pressing the volume key.

Pipetting; Electronic, Programming Example

This example sequence will use the Scratch (Program #0) space to create a sequence of operations to:

Fill 200ul from one source, Fill 300ul from another source

Mix 500ul, Mix 500ul internally

Disp 100ul, Disp 100ul, Disp 100ul, Disp 100ul, Disp 100ul, then PURGE

1. **Turn on the pipette and wait for the Display to show Fill or Run options. At this point it is ready to execute the Program # shown in the lower right of the Display OR create a new Scratch program which is what this example will do.**
2. **Press FILL, Vol will start blinking in the Display, use the up/down Vol arrows to set the volume for the first fill operation (200ul), then ENTER**
3. **Press FILL, Vol will blink, up/down to 300ul, then ENTER**
4. **Press MIX, the Vol will start blinking, use up/down Vol to set it to 500ul, then ENTER**
5. **Press MIX, Vol will blink, up/down to 500ul, then ENTER**
6. **Press DISP, Vol will blink, use up/down to set it to 100ul, then ENTER**
7. **Repeat step 6 for four times until all 500ul has been Dispensed**
8. **Press PURGE to clear the pipette and ENTER**
9. **Press ENTER to end this programming sequence. The P0 is now ready to "dry run".**
10. **Pull the Trigger to execute each step, verifying the proper operation in the Display window. The program is now ready to run using liquids.**

Pipetting; Electronic, ThermoSci, Matrix, Programming

Entering Program in Open Programming "Scratch Pad" (Program #0) mode

- Enter steps in the sequence they will be performed, then save the new Program to one of the five (5) permanent memory locations, up to 40 steps per program
- After turning on the device, Select any operation (normally fill) FILL, MIX, or PURGE
- Enter the volume for each operation using the up/down arrows
- Press ENTER to confirm each programming step
- Continue entering operational steps pressing ENTER after each step
- Press ENTER one extra time when all steps are done.

Creating/Storing a Program into a specific Program number (1-5)

- Press the PROG key then the VOL key until the desired program number is displayed
- Press and hold the PROG key while simultaneously pressing the Special Key Hole to enter the programming mode
- Begin entering the program steps as you would in Open Programming Mode
- Press ENTER to end and save the program in the preselected Program # location

Recall and Run an Stored Program

- Press the PROG key then the VOL key to find the desired program
- Press ENTER to activate the displayed program number

Reviewing a Program (without liquids)

- Make sure the RUN mode is displayed. (If display is flashing it is still in Programming mode, hit ENTER)
- Press the Trigger to move to each step of the Program

Adjusting Pipetting Speed in a Program

- Press the VOL key during any FILL, DISPENSE, or MIX operation and the new speed will stay active until the pipettor is turned off.

Pipetting: Manual, ThumbWheel,

Capacity, mL	Color	Bel-Art No.	VWR Catalog#	Unit	Price	Quantity
2	Blue	379020002	47751-780	Each (2 ML)	$26.03	
10	Green	379020010	47751-782	Each (10 ML)	$26.26	
25	Red	379020025	47751-784	Each (25 ML)	$35.34	

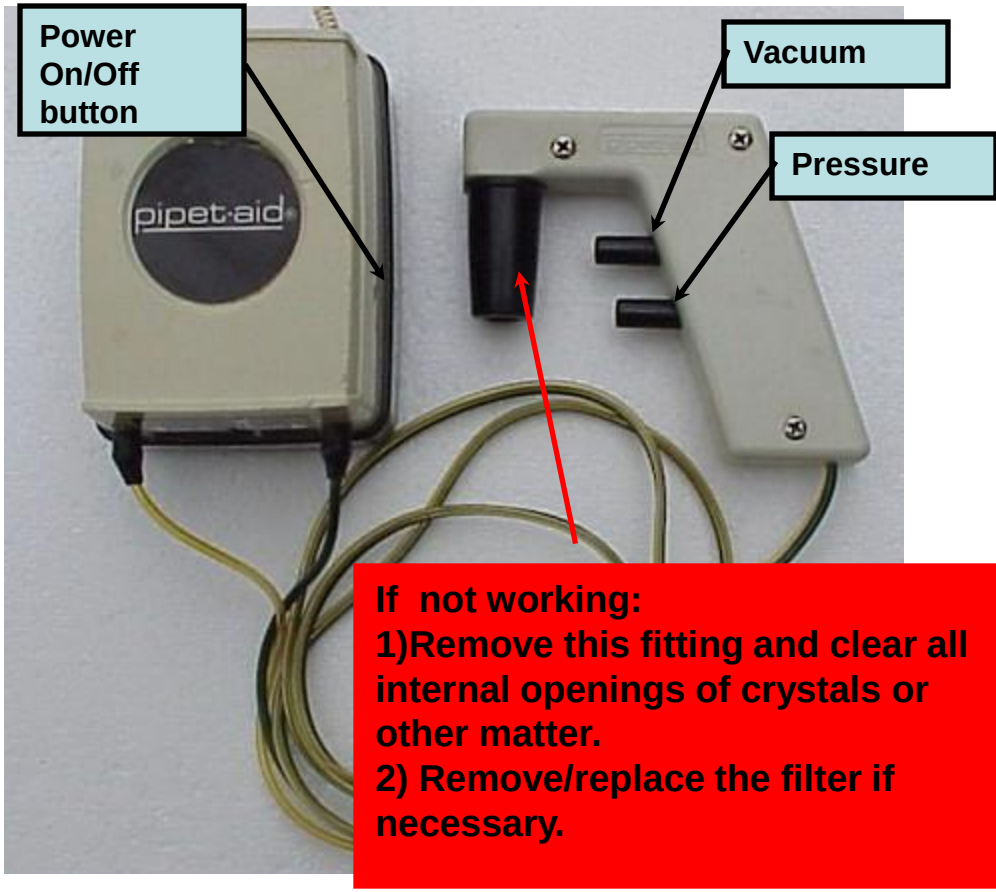
These pipetting devices provide accurate, trouble-free pipetting with simple, one-handed operation. The ergonomic design enhances comfort, utility, and dispensing precision while helping to reduce the risk of injury from repetitive and awkward pipetting motions. The optimally located thumb wheel rotates easily for precision aspirating or dispensing while using a more relaxed grip. The thumb wheel can also be used to blow out the pipet. Pipettors resist acids, alkalies, and most solvents and can be easily disassembled for cleaning. Length: 17.1cm (63/4"). Color-coded for easy identification.

Pipettes: Pipete-Aid Drummond, w Filtration Unit

BioHazard Filter Kit, add-on

Make Sure tubing is inside female opening, not just pushed against it.

Catalog 4-000-005 Pipet-Aid® Biohazard Filter Kit 4-000-060 Replacement Biohazard Filters (pair)



If not working:
1)Remove this fitting and clear all internal openings of crystals or other matter.
2) Remove/replace the filter if necessary.

Drummond Pipet-Aid. Model: JM0009

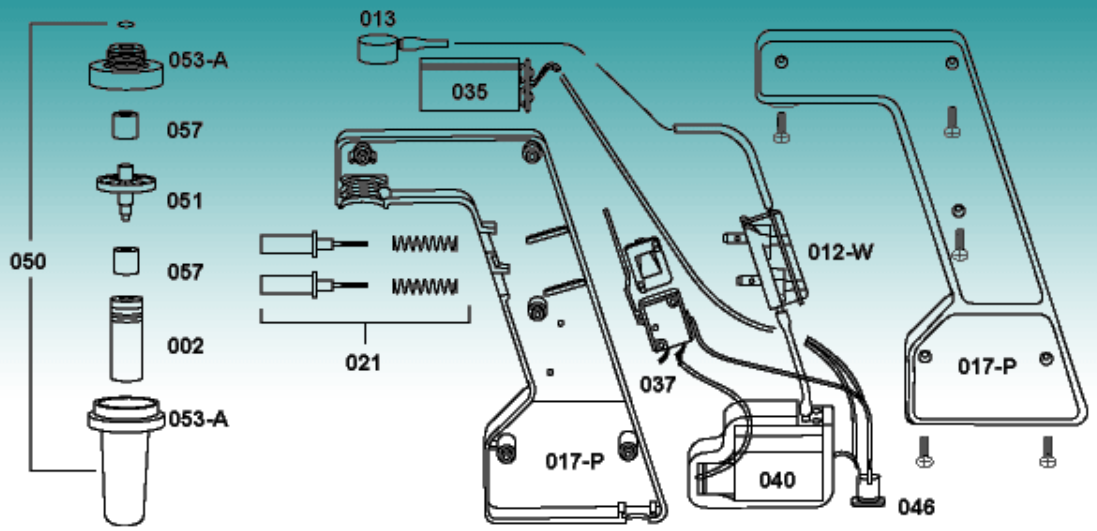
Electrically powered pipetting device for dispensing 1 to 100mL volumes. Just push button to fill and empty pipets. Accepts most glass and plastic pipets. Useful in confined spaces such as laminar flow hoods. Has positive-action check valve to prevent fluid intake into handle. Handle is autoclavable. Filler/Dispenser with 0.2µm Filter. Tissue culture unit eliminates cross-contamination due to overpipetting by using a dual hydrophilic, hydrophobic 0.8µm filter. Filter prevents detectable penetration of 0.035µm particles and prevents further use of filler/dispenser if it becomes contaminated with fluid.

Pipetting: Pipete-Aid, Drummond, 4-000-110-TC Parts

Drummond Scientific - Pipet Aid - Portable Pipet Aid

Home | Feeds (J) | Print | Tools | Help | Cut | Paste

Replacement Parts



Replacement Part Catalog Number	Description	Pack
4-000-002	Rubber Insert	2
4-000-003	Check Valve Assembly	1
4-000-004	Hose 5 feet	1
4-000-006	Complete Handle Assembly	1
4-000-008	Internal Parts Kit with Hose	1
4-000-009	Pipette Holder Outer Shell only	1
4-000-010	Diaphragm Kit for Pump	1
4-000-011	Hose Connectors	2
4-000-012-W	Valve Body Only	1
4-000-013	Handle Connector	1
4-000-014	Complete Pump 220V	1
4-000-016	Pressure Valve Housing for Pump	1

Replacement Part Catalog Number	Description	Pack
4-000-017	Handle Shell only	1
4-000-019	Button Assembly with spring	2
4-000-030	Pipet-Aid Charger 110 V	1
4-000-031	Pipet-Aid Charger 220 V (Euro.)	1
4-000-033	Pipet-Aid Charger 220 V (U.K.)	1
4-000-035	Replacement NiMH Battery	1
4-000-037	Portable Switch	1
4-000-040	Portable Motor and Pump	1
4-000-050	TC Nosepiece Complete Kit	1
4-000-051	Replacement Filters	5
4-000-052	Replacement Filters	50
4-000-053-A	TC Nosepiece Outer Shell only	1
4-000-057	TC Gasket	2
4-000-060	Dual Pump Filters	2

Done | Internet | 100%

Start | note_gadget - Notepad | Drummond Scientific ... | 1:35 PM

Pipetting: Pipet-Aid, BRDG, Drummond, Tissue Culture Nosepiece

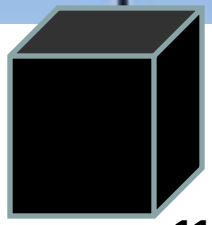
From VWR Catalog: Pipet-Aid, 110V, with Tissue Culture Nosepiece Kit 4-000-110-TC 53498-125 Each $262.41

This unit converts any standard laboratory pipet into a hand-operated dispenser. It is ideal for use in confined spaces such as laminar flow hoods. Accepts a range of standard glass and plastic pipets from 1 to 100mL. The Pipet-Aid device incorporates two precision valves that allow effortless control of fluid level in pipet. Easily replaceable check valve prevents fluid from entering the handle. Hose and handle are fully autoclavable. Withstands ordinary laboratory reagents. Pump features quiet, long-life operation.

The tissue culture nosepiece kit, standard on model 53498-125, comes with housing, gaskets, rubber insert, and four filters. Replacement outer shell (53498-068) for existing nosepiece is available separately. Additional filters may be ordered separately.

Pipetting: BRDG, Pipet-Aid, Hood-Mate, Drummond

From VWR Catalog: Pipet-Aid Hood Mate, 100V 4-000-300 62111-310 Each $340.79



110V Adapter

Specifically designed for convenient, comfortable pipetting under a hood. The Pipet-Aid Hood Mate device can deliver precise volumes with exact control. Made of UV-resistant material, unit is lightweight, never requires recharging, and won't "walk away" from your workstation.

Lightweight handle, weighing only 122g (4.3oz.), provides nine fill and empty speed settings and proportional fingertip control. Handle holder incorporates "auto off" and "sleep mode" features to save energy. Compact and convenient, the pump housing attaches to hood wall, saving space and preventing spills. Coiled vacuum/pressure line enters handle from the top, preventing bench items from being accidentally knocked over. Tissue culture nosepiece holds a self-locking membrane filter to protect against over-pipetting. One drop of liquid will cause filter to block, cutting off all liquid flow in the pipet and preventing damage to the unit.

Ordering Information: Eighteen-month manufacturer's warranty. Supplied complete with wall-mounting bracket, adhesive strips, AC adapter, and a tissue culture nosepiece complete with filters, gaskets, and rubber insert. Nosepiece outer shell rainbow pack contains one each of blue, green, orange, red, violet, and yellow.

Pipette-Aid: Tissue Culture Filter_Valve Assembly

Pipetting: Pipette Calibration System

The ARTEL PCS is a compact, bench-top spectrophotometer containing wavelength specific filters allowing measurement of NIST-traceable ARTEL reagents from 100 nL to 5000 µL. The system features an easy-to-use screen-based interface that guides the user through the calibration of single channel pipettes.

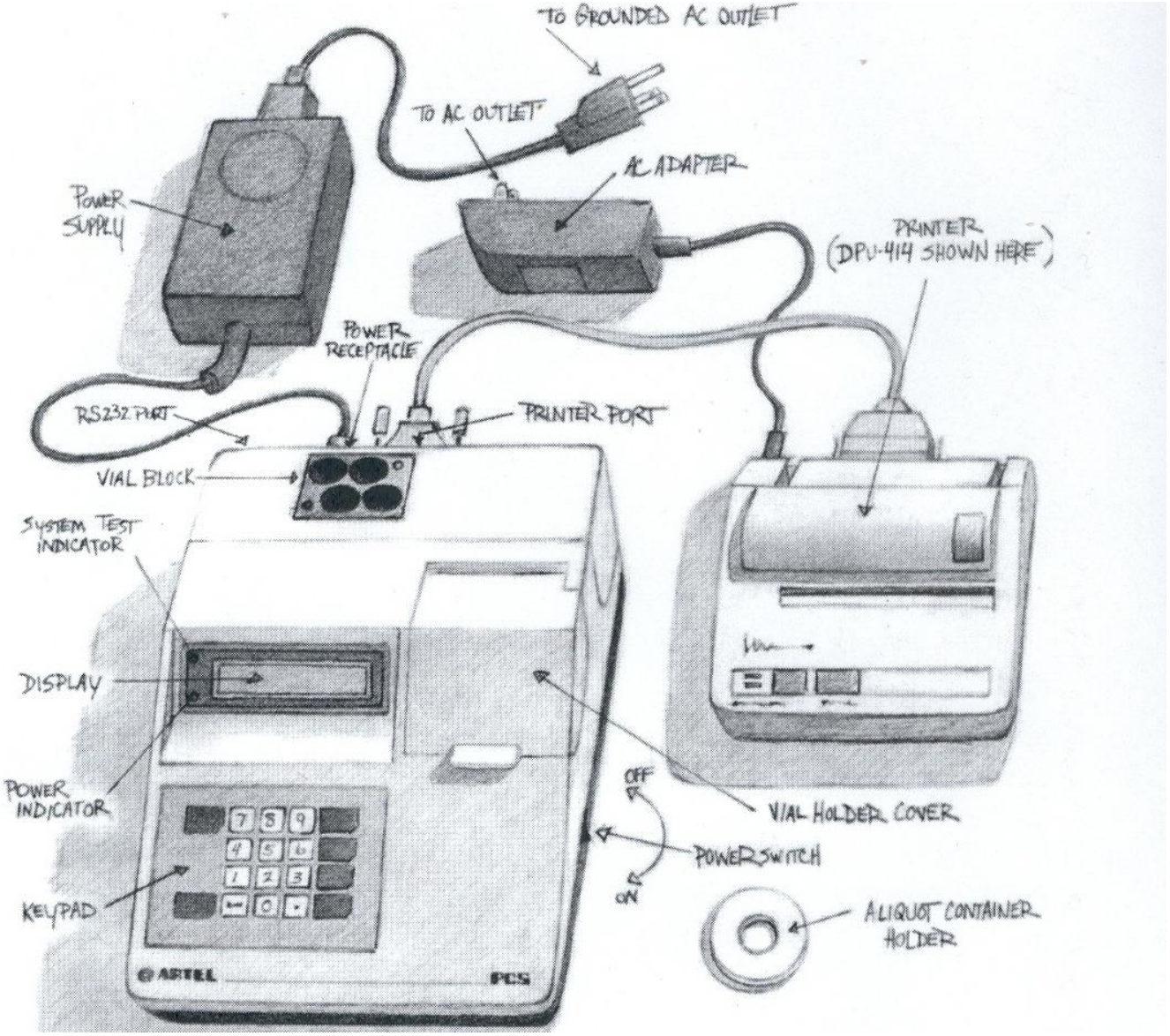
Size	23 cm W x 11.5 H x 30.5 D
Weight	4 kg
Keypad	18 keys
Display	2 X 20 alphanumeric
Wavelengths	520 nm and 730 nm
Microprocessor	Intel 8031
Printer Interface	Centronics Parallel
Serial I/O	RS 232: 9600 baud, 8 data bits, 1 stop bit, no parity

Noise < .00015A at A = 1

Inaccuracy < 0.75% (range 0-1.5 A)

Link to Artel Pipette Calibration System Quick Start Guide…pdf

Pippette Calibration System: Instrument and Printer Illustration



Pipetting: ARTEL PCS, Barcode printer, Seiko Printer, Scanner (see Computer Systems SOP for details)

Barcode printer

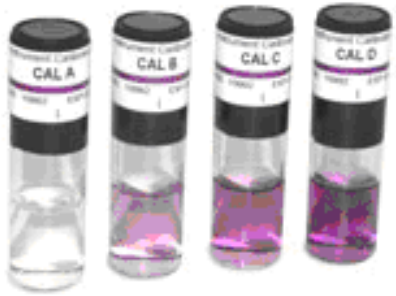
Barcode Scanner

Seiko DPU-414 Printer

Thermal PAPER For DPU-414
PK=5 ROLLS VWR#47735-415 Supplier# 952010409 Pack of 5 $53.25

Pipetting: Pipette Calibration, Reagents, Cal Kit

Part: G2235BN Reagent Kit, CAT# PCS-210
Blank Vials 50
50 Data points per Blank Vial
Sample Solutions 1-4 included for pipette volumes 2.0 - 5000 µL
(Additional solutions for pipette volumes 0.1 - 1.9 µL available separately)



Part: G2216C32T, CAT # PCS-600
The Calibrator Kit is composed of a series of vials containing solutions made of the same dyes as the Sample Solutions and Blank Solution. The kit provides traceability to the National Institute of Standards and Technology (NIST) by correlating the measured absorbance readings to the calibrated values encoded on the lot card associated with the kit. The set of vials must be measured every 30 days or when the environment changes by +/- 2 °C

Pipetting: Artel Calibration Supplies order Nov 2011

Attn: Becky Staerk/Teri Hacker

Ship To:

St. Louis Community College
STLCC Center Plant & Life Sci
BRDG Park at DDPSC
1005 N Warson Rd - Room 122

St Louis, MO
63132

Bill To:

St. Louis Community College
300 South Broadway
Attn: Accounts Payable

St. Louis, MO
631022810

Sales Order	Ship Group	Ship Via	Customer PO	Ship Date
SO115583	221664	UPS Ground	P1204181	12/1/2011

Line	Trans ID	Part Number	Lot/Serial Number	Quantity Shipped	UOM
001	441727	PCS-210 Bulk Kit with 50 Blank Vials	K1888B-45711 lot#	1	EA
002	441728	PCS-600 PCS Instrument Calibrator Kit	K1831C14-49537 lot code exp 10/12	1	EA
003	441729	PCS-221 PCS R1 Pipette Reagent Sample Solution *** Packed in PCS-210, PCS-211 Bulk Kits ***	R1107111201-45711 CAL B 1.0016, CAL C 0.9970, CAL D 0.9921 CAL code = 472 pcs2 exp 9/12	3	EA
004	441730	PCS-222 PCS R2 Pipette Reagent Sample Solution *** Packed in PCS-210, PCS-211 Bulk Kits ***	R20926111201-45711 CAL code = 681 pcs2 exp 9/12	2	EA
005	441731	PCS-223 PCS R3 Pipette Reagent Sample Solution *** Packed in PCS-210, PCS-211 Bulk Kits ***	R30913111201-45711 CAL code = 701 pcs2 exp 9/12	1	EA
006	441732	PCS-224 PCS R4 Pipette Reagent Sample Solution *** Packed in PCS-210, PCS-211 Bulk Kits ***	R40919111201-45711 CAL code = 477 pcs2 exp 9/12	1	EA

Packed By:

11/28/2011
2:09:37PM

NO #5 CAL code = 5050, NO #6 CAL code = 0449

25 Bradley Drive, Westbrook, Maine 04092-20123
tel 207-854-0860 / fax 207-854-0867 / email orders@artel-usa.com

SALES ORDER
SO115583

Pipetting: Artel PCS2, Calibrating Instrument, Pg 1/2

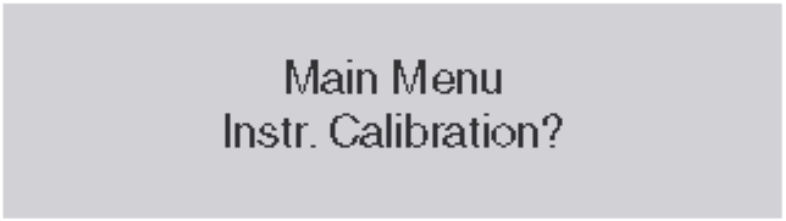


Figure 20

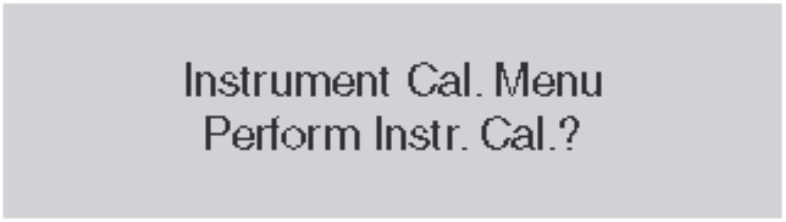


Figure 21

Calibrating the PCS:

- To access the Instrument Calibration Menu, press MENU SCROLL until the Instrument Calibration prompt is displayed (Figure 20).
- Press YES at the prompt.
- The Instrument Calibration Menu will open.
- Press YES at the Perform Instrument Calibration prompt (Figure 21).

Completed Instrument Calibration 12/8/11 RGM

Important Notes:

- Minimally, the Instrument Calibration should be performed every 30 days or prior to the next use, whichever is later.
- The Instrument is calibrated using the PCS Instrument Calibrator Kit, which contains 4 vials with calibrator values: CAL A, B, C and D.
- The contents of the kit are subject to degradation with time, temperature and exposure to light.
- Instrument calibration can now be initiated directly with Artel Pipette Tracker (APT) software (v.3.3). PCS Instrument calibration reports can be viewed, stored, and printed using Pipette Tracker.

Pipetting: Artel PCS2, Calibrating Instrument, Pg 2/2

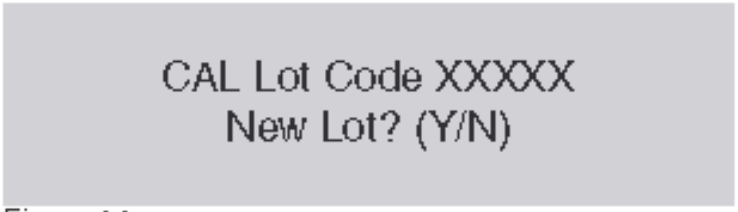


Figure 22

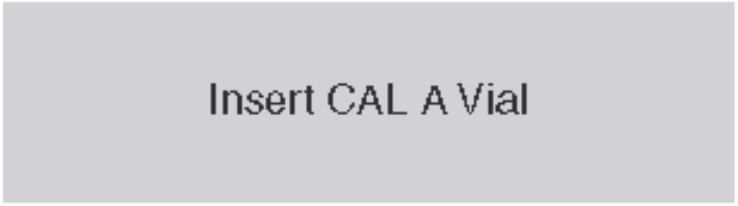


Figure 23

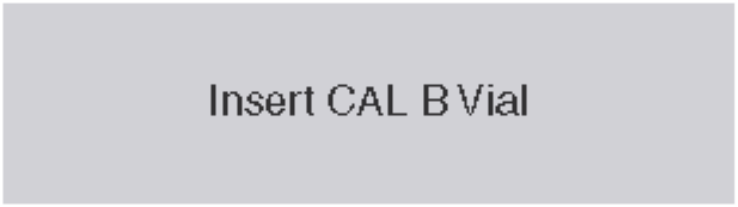


Figure 24

Important Notes:

- If the calibration is successful, the date of the last Instrument calibration check will change to the current day.
- Never remove the caps of the calibrator vials.
- Printed results will include:
  - Reading data
  - Instrument accuracy data
  - Instrument repeatability data
  - Overall calibration result

- At the prompt, enter the Operator ID for the Instrument calibration. For alpha character entry, see appendix E of the Procedure Guide.
- The Instrument will prompt to enter the Calibrator Kit lot code. This code is a four or five digit number found on the inside label of the Instrument Calibrator Kit box lid.
- After entering the lot code, press ENTER. If this lot code matches one previously entered, the next prompt will be to insert the first Cal Vial.
- If the lot code is for a new kit, press YES when the Instrument identifies it as new (Figure 22).
- The new calibrator values are found on the box label and must be entered at the prompt.
- The leading zeros and the decimal points must be entered. Press YES to confirm when the lot code is completely entered.
- After the lot code is successfully entered, the Instrument will take a series of readings and then prompt for the first calibrator vial (Figure 23).
- Use the CAL A vial in the Instrument Calibrator Kit.
- When the readings are complete, the Instrument will then prompt for the next vial (Figure 24).
- The remainder of the calibrator vials must be inserted at the sequential prompts. Results will be printed at conclusion.
- The entire process takes approximately 12 minutes to complete.

PCS: Instructor Setup Protocol

- ***Prior to the first use each semester, contact Bob Morrison to validate than an Instrument Calibration Protocol has been done.***

- ***Setup and connect the PCS and printer devices as shown in the diagram on Page 2.***

- ***15 minutes prior to use, move the CAL A Vial and several Blank Vials (blue liquid) from the Reagent Kit to the Vial Block holders, the 4 slots near the top of the device. Also remove the appropriate Range # Bottle (based on the volume the Students will be testing) from the Reagent Kit and place it near the PCS device to ensure that all chemicals are at/near the same temperatures.***

1. **Flip the switch, right lower side of the PSC device to the "on" position.**

2. **The PCS machine will be at the prompt: Main Menu Pipette Calibration? Press "YES" to begin the procedure**

3. **The next prompt is Lot Code 45711, Correct Y/N? or Enter: (If the system will not proceed due to expiration date on the lot #, see Troubleshooting at the end of this SOP)**

4. **A Self Calibration (Zero Check) will occur on the first use of the system after first power-on after 8 hours or due to lab temperature variations. If this is required, the following prompts will display:**
   - **Lift the cover on the Vial Holder and move the CAL A vial from the Vial Block into the Vial holder and close the cover. DO NOT remove the cap from the CAL A vial.**
   - **After the Zero check is performed, open the cover, remove the CAL A vial and return it to the Reagent Kit.**

5. **If the Zero check is OK, the system will respond: "Remove cap and insert Blank Vial". Proceed to the procedures for 20 uL Student testing.**

PCS: Setup Protocol for Student 20ul Testing

1. From the Reagent Vial Kit, select one of the Blank vials with a light blue fluid in the bottle. Remove the sealing cap from this Blank vial. Do not smudge sides of vial.
2. Open the Vial Holder Cover, insert Blank vial, press down to bottom. Close cover.
3. The system will "Read the Blank Vial" and respond by requesting Enter Operator ID_____. Let the PSC system remain at this prompt until you have completed steps 4,5, and 6 below.

4. From the Reagent Vial Kit, select the large Range Bottle #3 Sample Solution labeled with a range of 10-49 uL for the first round of Student testing at 20 uL. Mix the contents of the Range Bottle by inverting it several times before opening the cap.
5. Open the cap of an unused and empty Aliquot container and place it into the plastic Aliquot container ring (or other stable area).
6. Use a clean Transfer Pipette to aspirate and transfer an amount of the Range #3 Sample Solution to this empty Aliquot container. The amount should be five times the pipette test volume for each student. You may need to transfer more of the Sample Solution to the Aliquot container later, depending on the volume being used by the students as they perform pipette testing.

7. Have the students select their pipette and tips for the first test round at 20 uL.

8. When the Student tests are complete at 20uL, you may consider running another round of tests using another volume, new Blank Vials, and the appropriate Range # Sample Solution. Begin this procedure again at Step 1 above.

PCS: Student Test Protocol

1. **At Enter Operator ID _____ prompt, enter the first four digits (after the "A") of your Student ID. Press Enter when finished.**
2. **Enter the Pipette ID: 000XX found in the bar code or any simple value. Press Enter when finished.**
3. **Enter the Volume: ___ uL that the instructor has setup for this test. The system will respond with the number of samples that can be made using this Blank vial at this volume. If this number four or less, notify the instructor to replace the Blank vial.**
4. **Using you Pipette for testing this amount and a new tip for each sample, aspirate the targeted amount of Sample Solution from the Aliquot container.**
5. **Open the Vial Holder Cover and dispense the test pipette amount into the Blank Vial, careful to release the amount into the blue solution and not on the sides of the vial.**
6. **Close the Vial Holder cover and wait as the following messages are displayed: Mixing Sample #1, Reading Sample #1.**
7. **Device will display Result #1 = _____, print results, and prompt for next Sample.**
8. **Continue this process with your pipette and a new tip until the specified number of tests (usually five) have been made. Press END OF RUN after the fifth test has been run. The system will prompt: Reprint Results (Yes/No), press NO.**
9. **A summary of the results and statistical analysis will be printed. The device will prompt: Another Cal w/Vial (Yes/No). Press YES to allow the next student to begin testing at this volume at Step #1 above. Press NO after the last student or to change the volume setting for the next round of testing.**
10. **Tear off your results from the PCS printer, add your name, and follow your lab instructor directions for turning this in or further steps in the assignment.**

PCS Tracking Software: Databases

- Location:
  - The tracking software databases are stored in the location below on the host CPU
  - **C:/Program Files/Labtronics/Artel Pipette Tracker v3.2/Databases**

- Type/Format:
  - There are several unique databases, one for Pipettes, one for Methods and Test Plans, and one for an Audit trail.
  - All of these are Microsoft ACCESS however, it is highly recommended that you use only the Artel tracking software to view or modify them.

- Backup and Copy:
  - Although there is a “backup” option under the System- Define Database menu, it is recommended that you backup the entire Databases directory to a flashdrive or other media using a normal Microsoft drag/drop/replace operation.

- Restore:
  - To restore a backed-up or copied database, use the Microsoft drag/drop/replace operation from the media to the Artel Pipette Tracker v3.2 folder. This insures that audit and other parameters are consistent with the system software.

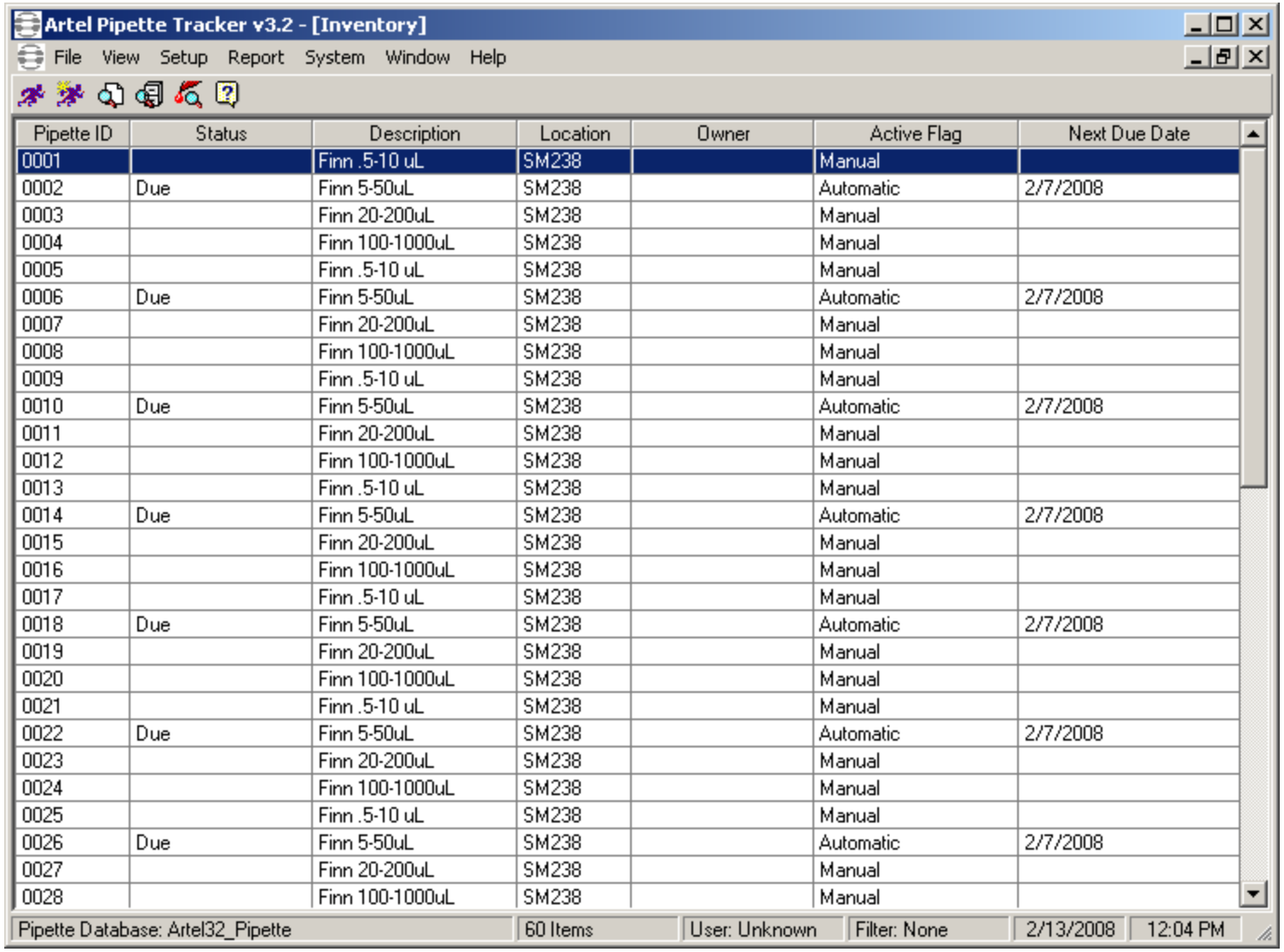
PCS Tracking Software: Methods, Models, Test Plans

- **General Procedures:**
  - Before you can add a pipette to the database either by either key in, copy, or barcode reader, you must first define a Test Plan and Method (in that order) that will be used for this pipette
  - **Test Plans** are used to identify the limits of measurements and accuracy range appropriate for pipettes
  - **Methods** are used to define the number of measurements/samples to be taken. There can be several of these, one for professional calibrations and others for Student operations
  - **Models** is used to select, edit or modify a list of current industry pipette Models with their specified limit parameter on accuracy and precision
  - Use the **PCS Setup** command in the main toolbar to initiate or modify these items

- **Defining Test Plans:**
  - Use the **Add, Edit, or Copy** options and enter a **title** and **description** for this Test Plan
  - Select the **Limit Table** from the model database that most closely matches your test plan requirements, then edit or modify the **limit parameters** if needed. Note, you can edit or add to the Models list from the Setup-Models toolbar
  - Modify the **Multiplier field** as needed.
  - Continue this operation using the Add, Edit, or Copy commands to complete the required Test Plans

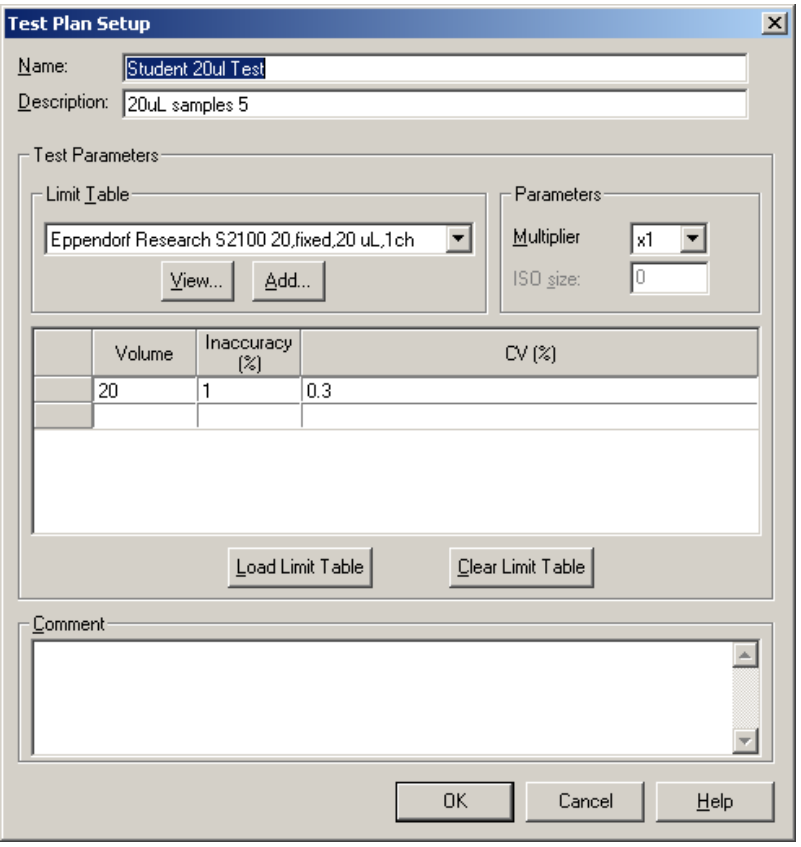
- **Defining Methods:**
  - Use the **Add, Edit, or Copy** options and enter and enter a name and description for each Method
  - Select the **# Samples per volume** for this Method and make sure the **Name/Description** field has information about the Samples quantity.
  - Select the **Testing Criteria and Report** level of detailed desired
  - Continue to Add, Edit, or Copy until all Methods have been defined.

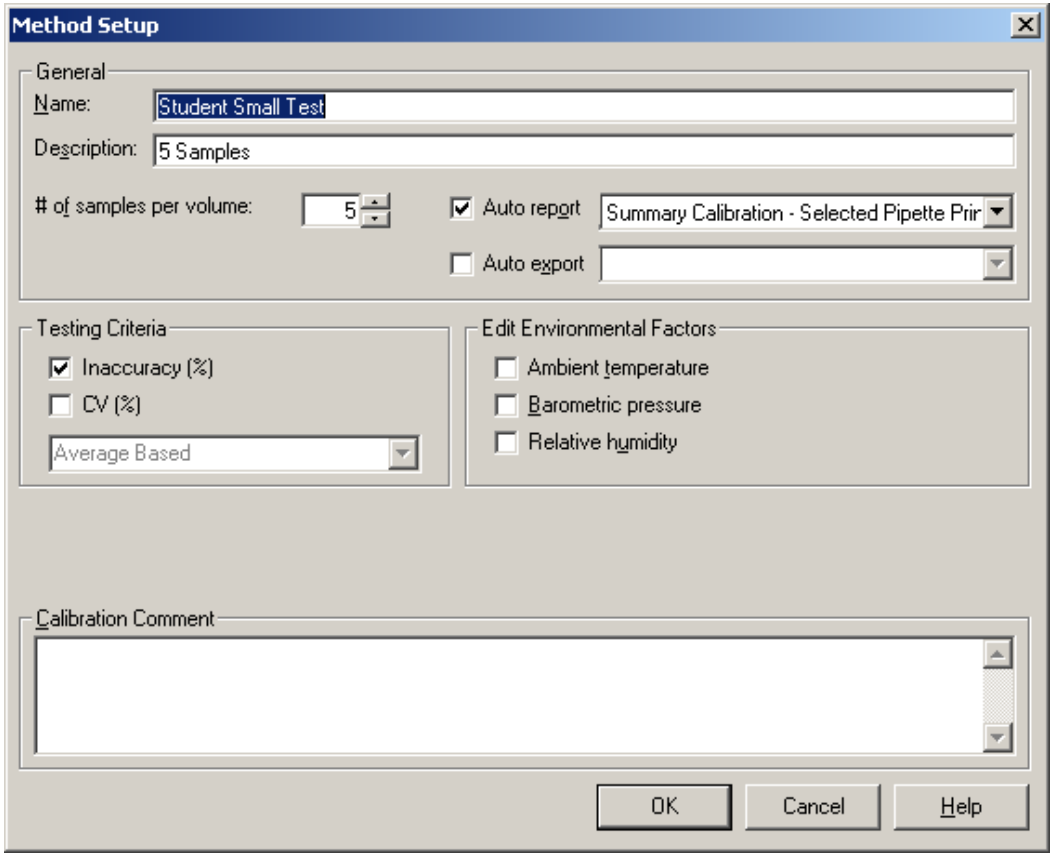
Pipette Tracking: View-Inventory Screen



Pipette ID	Status	Description	Location	Owner	Active Flag	Next Due Date
0001		Finn .5-10 uL	SM238		Manual	
0002	Due	Finn 5-50uL	SM238		Automatic	2/7/2008
0003		Finn 20-200uL	SM238		Manual	
0004		Finn 100-1000uL	SM238		Manual	
0005		Finn .5-10 uL	SM238		Manual	
0006	Due	Finn 5-50uL	SM238		Automatic	2/7/2008
0007		Finn 20-200uL	SM238		Manual	
0008		Finn 100-1000uL	SM238		Manual	
0009		Finn .5-10 uL	SM238		Manual	
0010	Due	Finn 5-50uL	SM238		Automatic	2/7/2008
0011		Finn 20-200uL	SM238		Manual	
0012		Finn 100-1000uL	SM238		Manual	
0013		Finn .5-10 uL	SM238		Manual	
0014	Due	Finn 5-50uL	SM238		Automatic	2/7/2008
0015		Finn 20-200uL	SM238		Manual	
0016		Finn 100-1000uL	SM238		Manual	
0017		Finn .5-10 uL	SM238		Manual	
0018	Due	Finn 5-50uL	SM238		Automatic	2/7/2008
0019		Finn 20-200uL	SM238		Manual	
0020		Finn 100-1000uL	SM238		Manual	
0021		Finn .5-10 uL	SM238		Manual	
0022	Due	Finn 5-50uL	SM238		Automatic	2/7/2008
0023		Finn 20-200uL	SM238		Manual	
0024		Finn 100-1000uL	SM238		Manual	
0025		Finn .5-10 uL	SM238		Manual	
0026	Due	Finn 5-50uL	SM238		Automatic	2/7/2008
0027		Finn 20-200uL	SM238		Manual	
0028		Finn 100-1000uL	SM238		Manual	

Pipette Tracking: Setup-Test Plan, Setup Method Screens





PCS Tracking Software: Pipette Definition

- General Procedures:
  - On the main Toolbar, select **View,** then **Inventory or Worklist**
  - On the main Toolbar, select **Setup** and then select **Pipette**
  - Select **Add, Edit, or Copy** to add or modify a Pipette from these lists to suit your requirements.

- Pipette General:
  - Key in or use a Barcode reader to enter the **Pipette ID:**
  - Enter a **Description** for the pipette
  - Key in a **location**/Room or storage area

- Details Tab:
  - Select the **Model** from the pull down list that matches your Pipette type

- Method and Test Plans:
  - Select the **Method** and **Test Plan** for this pipette from those previously entered
  - Select a **Calibration Interval** in **Number** and **Period**

- Select **OK** if you wish to define other Pipettes to the system

- Select **Calibrate** to initiate an actual Calibration procedure for this device. Note, to do this operation you must have the PSC device online and setup prior to this operation.

PCS: Troubleshooting , Expiration Date on Lot#

- During the setup for Student testing, the device checks the date of the lot number entered for the Cal A and other items against a database stored in the device. If the current date is beyond the “expiration date” the machine will not proceed.

- To get around this situation, use the following technique, assuming you are willing to accept use of expired vials.

  - When the device prompts for “ Pipette Calibration”? Press NO
  - Press NO on the next few screen options until you get to “Instrument Setup”, then press YES
  - Follow the prompts until you get to the “Enter Day/mo/year and press YES
  - Enter 07 for day, month, and year; ex (07/07/07) which is a year ahead of the expiration date on the chemicals/vials supplied with the original PCS order kit.
  - Enter NO on other options until you get back to the main Calibration menu
  - The System should no longer reject the testing due to expired lot # information.